



The Nature of Science

Section 1 What is science?

A. _____—a way of learning about the natural world

1. Scientists ask _____ about the natural world, but questions about art, politics, personal preferences, or morality can't be answered by science.
2. Answers are _____ because new knowledge and discoveries are continually being made.
3. **Scientific** _____—an attempted explanation for repeatedly observed patterns in the natural world.
4. A rule that describes a pattern in nature is a **scientific** _____.

B. Scientists study _____—collections of structures, cycles, and processes that relate to and interact with each other.

C. Science is divided into _____ main branches that study different systems.

1. _____ science studies living things and how they interact.
2. Earth and space systems are studied in _____ science.
3. _____ science studies matter and energy.
4. The practical use of science is called _____.

Section 2 Science in Action

A. The _____ includes observing, questioning, and researching; forming a **hypothesis**; predicting an outcome; investigating; analyzing; forming conclusions, communicating findings; and repeating the process.

B. Scientists _____ conclusions based on observations.

C. A _____ is one type of scientific investigation.

1. Factors that can be changed in an experiment are _____.
2. _____ are variables that remain unchanged.

D. _____ is important for both laboratory and field scientists.

Note-taking Worksheet (continued)**Section 3 Models in Science**

- A. _____—representation of an object or event used as a tool for understanding the natural world
- B. Models come in _____ basic types.
1. _____ models can be seen and touched.
 2. _____ models can be seen on a computer screen but not touched.
 3. _____ models are concepts that describe how someone thinks about something in the natural world.
- C. Models have several _____.
1. Models _____ observations and ideas.
 2. Models can _____ predictions.
 3. Models can _____ time, money, and lives.
- D. Models _____ over time as new observations and discoveries are made.

Section 4 Evaluating Scientific Explanation

- A. _____—using what is known to decide if new facts should be agreed with or believed
- B. _____ should be evaluated.
1. The data should be _____ and exact.
 2. Observations should be carefully, accurately, and completely _____.
 3. Data must be _____ to be reliable.
- C. _____ should be evaluated.
1. Conclusions should _____.
 2. _____ should be considered before a single conclusion is reached.
- D. _____ claims should be carefully analyzed, since they are designed to sell products rather than to promote scientific evidence impartially.